89748
S/072/61/000/003/001/003
B105/B206

Method of determining tear and elasticity...

Legend to Table 2: a) diameter of the clamped sample, mm; b) rupture pressure (mean value from 15 measurements), atm; c) value of σ_{rupt} calculated according to Eq. (2), atm; d) deviation of σ_{rupt} from the arithmetical mean.

Таблица 2

a Диаметр зажима в мм	b Разрывное давление (среднее из 15 измерений) в кг/см²	c Величина $\sigma_{разр}$, рассчитанная по формуле (2), в кг/см²	d Отклонение $\sigma_{разр}$ от среднеарифм. величины в %
30	1,2	3,100	9,35
20	2,56	3,780	10,5
15	3,0	3,500	2,5
10	4,1	3,300	3,5

Card 7/7

TEMKIN, Boris Semenovich; KITAYGORODSKIY, I.I., doktor tekhn. nauk, prof., retsenzent; NOVIKOVA, A.F., retsenzent; SULIMENKO, M.V., retsenzent; DUKHOVNYY, F.N., red.; SHAPENKOVA, T.A., tekhn.red.

[Technology of glass and glass products]Tekhnologiia stekla i stekloizdelii. Moskva, Rostekhizdat, 1962. 458 p. (MIRA 16:3)

(Glass)

43277

15.2100

S/072/62/000/012/001/001
B101/B144

AUTHORS: Kitaygorodskiy, I. I., Doctor of Technical Sciences, Professor, Faynberg, Ye. A., Engineer, Grechanik, L. A., Candidate of Technical Sciences

TITLE: Effect of some oxides on the reduction of lead glasses

PERIODICAL: Steklo i keramika, no.12, 1962, 8 - 10

TEXT: Three problems gave rise to the present paper: (a) Semiconducting layers forming on glass surfaces by reduction; (b) the problem of eliminating the discoloration of glasses on thermal treatment in a reducing atmosphere; (c) effect of the chemical structure of glasses on the diffusion of reducing gases. Binary P-40 (R-40) lead glasses consisting of 60% SiO_2 and 40% PbO were used. At a constant content of PbO, 5 or 10% SiO_2 was replaced by Na_2O, BaO, ZnO, CdO, B_2O_3, Al_2O_3, TiO_2, V_2O_6, Cr_2O_3, MnO_2, Fe_2O_3, CoO, or NiO at 1250 - 1300°C (30 - 40 min), then the glass was reduced for 4 hrs in a hydrogen atmosphere at 400°C. The transparency T_λ was measured spectrophotometrically in the 350 - 1100 mμ

Card 1/3

region. The integral transparency S was determined from the curve T_λ versus λ and the change was calculated to be $T_{red} = \sqrt{S_1/S_0}$, where S_1 is the integral transparency of reduced, and S_0 of non-reduced glasses. Furthermore, glasses in which Li_2O, Na_2O, K_2O, Rb_2O, or Cs_2O, were substituted for 15% SiO_2, were reduced for 3 hrs in H_2 at 360°C, and the transparency was also measured. Results: Glasses containing 5 and 10% Cr_2O_3 and 10% NiO crystallized; the transparency of specimens containing 10% CoO was too low. The other specimens showed the possibility of classifying oxides under the experimental conditions: (1) Oxides that support the Pb reduction: V_2O_5, NiO, Al_2O_3, and to a smaller extent also Na_2O; (2) oxides by which the reduction is not affected: TiO_2, CoO, B_2O_3, and CdO; (3) oxides inhibiting the reduction of Pb: $Fe_2O_3 > MnO_2 > ZnO > BaO$. Hence it is concluded that new electrochemical glasses, very stable to thermal treatment in a reducing atmosphere, can be produced from lead glasses containing Fe_2O_3 or MnO_2. The increase in reducibility of lead

Effect of some oxides on the reduction... S/072/62/000/012/001/001
B101/B144

glass with the radius of the alkali ion is explained by the glass structure being loosened as the alkali ion radius increases, which favors the diffusion of hydrogen and polarization of oxygen, thus reducing Si-O-Si bond is reduced. There are 3 figures. The most important English-language reference is: W. Weyl, E. Marboe, Glass Industry, 1961, v. 42, no. 4.

ASSOCIATION: MKhTI imeni D. I. Mendeleyeva (MKhTI imeni D. I. Mendeleyev) (I. I. Kitaygorodskiy); Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla (Scientific Research Institute of Electrotechnical Glass) (Ye. A. Faynberg, L. A. Grechanik)

Card 3/3

KITAYGORODSKIY, I.I.

Research conducted by the Department of Glass Technology; report of the Scientific Technological Conference devoted to the 40th anniversary of the Moscow Institute of Chemical Technology. Trudy MKHTI no.37:5-10 '62. (MIRA 16:12)

KITAYGORODSKIY, I.I., doktor tekhn.nauk, prof.; KARPECHENKO, V.G., insh.; GRECHANIK, L.A., kand.tekhn.nauk

Significance of the polarising properties of ions for developing the composition of low-melting types of glass. Stek.i ker. 19 no.11:10-13 N '62. (MIRA 15:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva (for Kitaygordoskiy).
(Ions) (Glass)

KITAYGORODSKIY, I.I., prof. (Moskva); BONDAREV, K.T., kand.tekhn.nauk (Moskva)

New crystal glass materials made of slag. Priroda 51 no.9:111-114 S '62. (MIRA 15:9)

(Glass) (Slag)

ANASTASIADI, A.P.; BOROVSKIY, V.R.; VYBORNOV, G.V.; KOPELYANSKIY, G.D.; MAK, I.L.; PECHURO, S.S.; PIYEVSKIY, I.M.; RACHEVSKAYA, K.D.; REYZNER, Yu.B.; RYBAK, L.L.; TSEPELIOVICH, M.R.; SHUMAKHER, L.I.; YUSHKEVICH, M.O. [deceased]; AGEYENKO, Yu.G., nauchnyy red.; BELUGIN, A.T., nauchnyy red.; KOGAN, G.Z., nauchnyy red.; KRZHEMINSKIY, S.A., nauchnyy red.; MITSKEVICH, M.I., nauchnyy red.; SILENOK, S.G., nauchnyy red.; TRILESNIK, Z.Ye., nauchnyy red.; ZUBAREV, K.A., glav. red.; TROFIMOV, I.P., red.; SKRAMTAYEV, B.G., glav. red.; BALAT'YEV, P.K., red.; KITAYEV, Ye.N., red.; KITAYGORODSKIY, I.I., red.; ROKHVARGER, Ye.L., red.; KHOLIN, I.I., red.; CHERKINSKAYA, R.L., red.; RODIONOVA, V.M., tekhn. red.

[Manual on the production of gypsum and gypsum products] Spravochnik po proizvodstvu gipsa i gipsovykh izdelii. [By] A.P. Anastasiadi i dr. Pod red. K.A.Zubareva. Moskva, Gosstroiizdat, 1963. 464 p. (MIRA 16:7)
(Gypsum) (Gypsum products)

ACCESSION NR: AT4019279 S/0000/63/003/001/0031/0038

AUTHOR: Kitaygorodskiy, I. I.; Khodakovskaya, R. Ya.

TITLE: The recrystallization period in glass and its significance

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vy*p. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 31-38, insert page facing p. 16 and upper half facing p. 17

TOPIC TAGS: glass, crystallization, precrystallization period, crystallization catalyst, cordierite, electron microscopy, thermography

ABSTRACT: The temperature conditions during the so-called precrystallization period demonstrated experimentally in the catalyzed crystallization of glass, exert a great effect on the subsequent crystallization process and hence on the structure and properties of the final product glass ceramics. In order to study the processes in the production of glass ceramics, a glass composition based on cordierite was chosen in the SiO_2-Al_2O_3-MgO system. The catalysts used were oxides of the elements of group IV of the periodic table (TiO_2, SnO_2ZrO_2, PbO) as well as fluorine. Complex experimental methods, such as

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ACCESSION NR: AT4019279

x-ray, differential thermography and electron microscopy were used. A relationship is established between the properties, structure, and phase composition of the material and the conditions of thermal treatment of glass. Differential thermal analysis of glass showed that the formation of the first crystalline phase occurs at 815C. Any temperature below this is a precrystallization period. A relationship is also established between the temperature of the maximum exothermic effect, connected with the formation of mullite, and the temperature of the thermal treatment of glass in the precrystallization stage. The dependence of the density γ, the thermal expansion coefficient μ and the strength R on the crystallization temperature is plotted at different times of precrystallization. Structural changes, depending on the temperature of precrystallization are illustrated by microphotographs. From the investigations, general rules are established which are typical for heterogeneous crystallization and independent of the composition of the initial glass. This makes it possible to control the crystallization of glass to a greater extent by choosing the optimal conditions of thermal treatment. Orig. art. has: 10 figures.

ASSOCIATION: Kafedra stekla MKhTI im. D. I. Mendeleyeva (Department of Glass, MKhTI)

SUBMITTED: 00 DATE ACQ: 21Nov63 ENCL: 00

SUB CODE: MT NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AT4019303 S/0000/63/003/001/0137/0140

AUTHOR: Kitaygorodskiy, I. I.; Zevin, L. S.; Artamonova, M. V.

TITLE: Investigation of the phase composition of glassy-crystalline materials based on the systems lithium oxide-alumina-silica and lithium oxide-magnesium oxide-alumina-silica

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vy*p. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 137-140, top half of insert facing p. 162

TOPIC TAGS: glass, glassy-crystalline material, eucryptite, spodumene, petalite, x-ray diffraction, lithium aluminosilicate

ABSTRACT: Roentgenographic studies were carried out to follow the changes in the phase composition of glassy-crystalline materials of the systems Li_2O-Al_2O_3-SiO_2 and Li_2O-MgO-Al_2O_3-SiO_2 with different molecular ratios of the oxides during thermal treatment. The ternary system includes three minerals found in nature: eucryptite (molecular ratio of oxides 1:1:2), spodumene (1:1:4) and petalite (1:1:8). It is suggested that the structural

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ACCESSION NR: AT4019303

changes observed are connected with one of the following phenomena: The formation of a "second phase" (the composition of which cannot be determined by the x-ray data obtained for compounds of this system) or the modified transformation of β-spodumene from the low-temperature form, stable in a temperature range of 700-800C to a high-temperature form, stable at temperatures higher than 900C. The formation of a second phase was observed in all cases with oxide ratios between 1:1:4 and 1:1:10. If the line of the "second phase" was eliminated, the x-ray diagrams of the compounds with oxide ratios from 1:1:2 to 1:1:10 were very similar and differed only by a shift of the lines toward greater values of Θ during the transition from the compound 1:1:2 to the compound 1:1:10. This effect is probably connected with the formation of a wide range of solid solutions, including β-eucryptite, β-spodumene and petalite. However, both hypotheses can be verified only by the preparation of monocrystals of β-spodumene. Orig. art. has: 3 figures.

ASSOCIATION: Kafedra tekhnologii stekla MKhTI im. D. I. Mendeleyeva (Department of Glass Technology, MKhTI).

SUBMITTED: 17May63 DATE ACQ: 21Nov63 ENCL: 00

SUB CODE: MT NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AT4019314 S/0000/63/003/001/0172/0174

AUTHOR: Kitaygorodskiy, I. I.; Il'inichnina, M. D.

TITLE: An electron microscopic investigation of the structure of various glassy-crystalline materials

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vy*p. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 172-174, insert pages between p. 168 and 169

TOPIC TAGS: glass, glassy-crystalline material, glass structure, electron microscopy, calcium fluoride, sodium fluosilicate, slag

ABSTRACT: Glasses obtained from metallurgic slags were investigated with the TESLA BS 242A electron microscope at a voltage of 60 kv and a magnification of about 6000 X. The cleavage plane and the conditions of investigation are described. Slag ceramics with a fine-grain structure and a crystal length ranging from 0.1 to 2 microns were test samples. The electron photomicrographs of the fracture plane of slag glassy-crystalline materials obtained with different additives by the same thermal treatment (950C, 3 hours) are shown. It was found that

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ACCESSION NR: AT4019314

the addition of 25% Na_2SiF_6 leads to the formation of a microcrystalline structure agd that the principal crystalline phases are calcium fluoride (CaF_2) and anorthite ($CaO \cdot Al_2O_3 \cdot 2SiO_2$). A decrease in the amount of sodium fluosilicate led to an increase in the size of the anorthite lamellae to a length of 2 μ. With the addition of TiO_2 the crystals became rod-shaped and drop-shaped. Roentgenographic analysis of this crystalline phase showed titanite ($CaO \cdot TiO_2 \cdot SiO_2$). The slag ceramic material with the best mechanical properties was characterized by a densely packed microcrystalline structure with a particle size of 0.1-0.3 μ. Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 17May63 DATE ACQ: 21Nov63 ENCL: 00

SUB CODE: MT NO REF SOV: 000 OTHER: 000

Card 2/2

KITAYGORODSKIY, I.I., prof.

"Sitall" is a new effective material. Strol. mat. 9 no.5:1-2 My '63. (MIRA 16:7)

(Building materials)

KITAYGORODSKIY, I.I., doktor tekhn. nauk; RABINOVICH, E.M., inzh.; SHELYUBSKIY, V.I., kand. tekhn. nauk

Regularities in the initial stages of the formation of crystal structures in glass. Stek. i ker. 20 no.12:1-9 D '63. (MIRA 17:1)

S/072/63/000/004/001/005
A051/A126

AUTHORS: Kitaygorodskiy, I. I., Doctor of Technical Sciences, Professor,
Kopytov, L. N., Engineer

TITLE: Strengthening of plate glass by etching

PERIODICAL: Steklo i keramika, no. 20-4, 1963, 4 -8

TEXT: A study was made of the etching-law sequence of glass under tension or non-tension. The possibilities of evaluating the microdefects according to magnitude and shape were analyzed. The causes of defect occurrence and the prevention of new damage to the etched glass were investigated. A 2 - 3 mm plate glass (72 SiO_2, 15 Na_2O, 8 CaO, 3.5 MgO and 1.5 Al_2O_3) with vertical stretch was used for the analysis. The bending strength was calculated from the formula: $\sigma = 4.45\ P/h^2$, where P is the destructive load in kg, h - the sample thickness in mm. The centro-symmetrical strength was determined from the formula: $\sigma = 0.824\ P/h^2$. A linear relation was derived between glass strength and etching time or thickness of the removed layer. A comparison of the obtained relation with the theoretical Griffith formula is made: $\sigma = \sqrt{\frac{2ET}{\pi a}}$, where E is the resili-

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ence modulus, equaling 7,000 kg/mm^2, T - the surface energy $5 \cdot 10^{-5}$ kg/mm, c - crack size, equaled to the thickness of the defective layer in mm. Thus, an indirect evaluation of magnitude and shape of the surface microdefects can be made. The method of gradual etching helps to judge not only the change in the defects during the strengthening process, but also of the differences in their initial shape. It is pointed out that the removal of the damaged surface layer does not protect the glass against further damage from either mechanical, corrosive or thermal causes. It was established that the action of moisture or heating to a temperature of calcination has much less effect on the reduction in strength of the etched glass than the mechanical damage of its surface. It is further shown that the application of a fine layer of material on its surface, with the ability to reduce the surface friction coefficient, can be used as a method of etched-glass protection from mechanical damage. There are 4 figures and 1 table.

ASSOCIATION: MXTИ (MKhTI) im. Mendeleyeva (Moscow Chemo-Technical Institute im. Mendeleyev

KITAYGORODSKIY, I.I.; KOPYTOV, L.N.

Effect of the medium on the formation and development of surface microcracks in strained glass. Dokl.AN SSSR 149 no.3:580-582 Mr '63. (MIRA 16:4)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva. Predstavleno akademikom P.A.Rebinderom.
(Glass) (Surface tension)

L 25773-65
ACCESSION NR: AR4040351

expansion, thermal stability, microscopic hardness and viscosity. The results of [illegible] the crystallizing and physicochemical properties [illegible] glasses revealed a [illegible] compositions having relatively high [illegible] properties [illegible] according to the technological [illegible] of plate [illegible] glass [illegible] the [illegible] ZrO_2 SiO_2 [illegible] Al_2O_3 [illegible] MgO 4 [illegible] and [illegible] respectively [illegible] and can be recommended for use in [illegible] and in glassware. [illegible]

[illegible]

AID Nr. 986-13 10 June

SYNTHESIS OF SITALLS FROM SLAGS (USSR)

Kitaygorodskiy, I. I. IN: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 8 no. 2, 1963, 192-197. S/063/63/008/002/011/015

Studies which led to the development of the glass-bonded ceramic materials pyroceram in the USA and sitalls in the USSR by the Moscow "Order of Lenin" Institute of Chemical Technology imeni D. I. Mendeleyev (MKhTI) are briefly reviewed. It is stated that, in contrast to pyroceram, sitalls based on the cordierite system are produced by a simple process which involves catalytic polymerization [the catalyst is not specified in the article] of cheap materials without irradiation by short-wave rays. The Soviet process takes into account the results of preliminary studies which showed that heat treatment of glass in the precrystallization period (microliquation and formation of crystallization nuclei) causes considerable changes in the structure of the glass, indicated by changes in the properties of the glass, and strongly affects subsequent crystallization of the glass. Prolonged heat treatment in the vicinity of T_g causes a gradual "ordering" of the glass structure with the formation of regions whose structure approaches that of the crystalline

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phase. This process is slow and results in the transition of glass into sitalls. Study of the precrystallization process casts doubt on the existence of a unique glassy state and indicates that this state must be considered metastable and intermediate between the liquid and solid states. The "sitallization" conditions of glass can vary within broad limits, depending on the composition of the initial glasses and the required properties of the sitalls. The problem of finding cheap raw materials for sitalls was solved by the use of liquid and solidified metallurgical slags. After studying the solidification of glass and the significance of its solidification rate, MKhTI formulated the theoretical principles of the conversion of molten slags into glass and developed a process for producing sitalls by controlled crystallization of slag glass. The sitalls produced have a very fine, uniform structure. They are extremely long-lasting and can be used as construction materials, substitutes for ferrous metals, and insulating and reinforced foamed materials. Slag glass can be used for the production of containers and glass-fiber materials. "Sitallurgy" is a promising industry because 1) its raw material sources in the form of slags are unlimited; 2) it utilizes the thermal energy of waste slags; and 3) it permits the use of existing equipment in the glass industry.

[BAO]

BARBARINA, T.M.; BUHYR', N.F.; BUTT, L.M.; VEL'SOVSKIY, V.N.; GORLOV, Yu.P.; GRIBANOVSKIY, V.G.; DROZDOV, I.Ya.; YERFIN, I.A.; ZEZIN, V.G.; KEVESH, P.D.; KOCHANOV, E.I.; KOSYREVA, Z.S.; LEVIN, S.N.; MAKHNOVICH, A.T.; MERZLYAK, A.N.; RODOV, E.S.; ROZHNOV, A.I.; SEREBRYANSKAYA, B.I.; SUKHAREV, M.F.; USTENKO, A.A.; KHOMENKO, Z.S.; SHMIDT, L.M.; ETIN, A.O.; YAKHONTOVA, N.Ye.; KITAYTSEV, Vladimir Andreyevich, prof., doktor tekhn. nauk, red.; SKRANTAYEV, B.G., glav. red.; TROKHIMOVSKAYA, I.P., zam. glav. red.; KRAVCHENKO, I.V., red.; KITAYGORODSKIY, I.I., red.; KRZHEMINSKIY, S.A., red.; ROKHVARGER, Ye.L., red.; BALAT'YEV, P.K. red.

[Manual on the manufacture of heat insulating and acoustical materials] Spravochnik po proizvodstvu teploizoliatsionnykh i akusticheskikh materialov. Moskva, Stroiizdat, 1964. 524 p. (MIRA 18:1)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722920007-2"

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722920007-2"

ACCESSION NR: AP4040681 S/0072/64/000/006/0005/0008

AUTHOR: Kitaygorodskiy, I. I.; Bobkova, N. M.; Nemkovich, I. K.

TITLE: Electric properties of alumo-boro-silicate glasses

SOURCE: Steklo i keramika, no. 6, 1964, 5-8

TOPIC TAGS: alumo boro silicate glass, glasc electro resistivity, glass dielectric constant, glass dielectric loss, electric property

ABSTRACT: The work was prompted by the scarcity of data concerning the electric properties of alumo-boro-silicate glasses, despite the fact that they attract growing interest because of their high electro insulating properties. The authors investigated glasses of the following compositions (wt%) 62.4 SiO_2, 8 B_2O_3, 8 Al_2O_3, 20 RO, 1.6 K_2O and 64 SiO_2, 8 B_2O_3, 8 Al_2O_3, 20 RO, where R=MgO, CaO, SrO, BaO and PbO. The influence of chemical composition, field frequency and temperature on electric properties:(dielectric constant, resistivity and dielectric losses) was investigated, for all glass types electric resistivity ρ expressed as $\log \rho$ -1/T is linear (T=temp). Cation mobility determines the electroconductivity of glass (the Pb cation being an exception because of lead glass

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ACCESSION NR: AP4040681

lower viscosity at high temperatures). Dielectric losses, tan δ, were studied in the range from 10^5 to $3 \cdot 10^9$ cycles. It was found that losses are at their lowest point at medium frequencies: 10^6 - 10^7 cycles. The losses of lead glass are similar to those of barium glass. An increase of the loss angle is observed at temperatures rising from 20 to 300C. Dielectric constant ε of low alkalinity glasses increases with the introduction of one divalent oxide instead of another - in proportion to the increasing radius of the cation. With increasing field frequency, dielectric constant rapidly decreases when frequency exceeds 10^7. It increases with temperature due to shorter relaxation time. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL:

SUB CODE: MT NR REF SOV: 005 OTHER: 001

Card 2/2

L [illegible] EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/[illegible] Pg-4/Pt-10/Pu-4 WW/WH Pat-1

ACCESSION NR: AP4048556 S/0286/64/000/019/0032/0037

AUTHOR: Kitaygorodskiy, I. I.; Bondarev, K. T.; Barsukov, M. I.; Gazorenko, V. I.; Minin, V. T.; Mitkevich, G. I.; Parvenkov, G. S.; Bovko, G. V.

TITLE: Method for manufacturing flat foam pyroceram products. Class 32, No. 165528

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1964, 32

TOPIC TAGS: An Author Certificate has been issued for a method of manufacturing flat foam pyroceram (sitall) products based on glass made from slag. The glass is heat-created in two stages in order to obtain a porous surface, while maintaining a nonporous subsurface. While the subsurface is being cooled, the surface is heated to [illegible] above the crystallization point to a viscosity not to exceed [illegible]—500 poise, and maintained under these conditions for 10—30 minutes.

ASSOCIATION: none

Card 1/[illegible]

EWP(1)/EWP(1)/EWP(b) Pc-4/Pc-4 RM/WW

ACCESSION NR: AR5001236 S/0081/65/000/001/M009 M009

SOURCE: Ref. zh. Khimiya. Sv. t., Abs. 2M80

AUTHOR: Vargorodskiy, I. I.; Sil'vestrovich, S. I.; Firsov, V. M.

TITLE: Study of the strength of glasses quenched in liquid polyorganosiloxanes

CITED SOURCE: Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva, vyp. 45, [illegible]

TOPIC TAGS: glass strength, glass quenching, glass hardening, [illegible] fluid, polyorganosiloxane, polyethylhydrosiloxane, laboratory glass [illegible] vacuum glass

[illegible] article presents the results of the first stage of a study on [illegible] glasses (KS 34 and Ts-32) and [illegible] rare [illegible] liquids [illegible] the degree of hardening of the [illegible] was determined by means [illegible] ratio [illegible] were illuminated in a direction perpend. [illegible]

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L 19006-65

ACCESSION NR: AR5007236

The results showed that it is possible to strengthen various glasses, differing [illegible] and properties, quite appreciably by quenching them in liquid [illegible] zones, the effects of the thermal conditions of the quenching [illegible] regularities of the chemical composition of the glass on the [illegible] of its strengthening are elucidated. Bibliography with 17 [illegible]

[illegible] Mikhailova

SUB CODE: MT, OC

ENCL: 00

Card 2/2

[illegible] EWT(m)/EWP(b) Pg-4 WW

ACCESSION NR: AP4012094 S/0020/64/154/002/0427/0429

24

23

B

[illegible] Vitkorodskiy, I.I.; Neus, M.D., Artamonova, K.V.

[illegible] of electron microscopy [illegible] is investigating crystalline glass materials

[illegible] SSSR. Doklady*, v. 154, no. 2, [illegible]

[illegible] analysis, electron microscopy, [illegible] x-ray [illegible] glass, glass sieve, [illegible] crystals

ABSTRACT: The joint use of electron microscope analysis and x-ray analysis gives valuable information about the structure of new [illegible] materials, permits the [illegible] crystallization [illegible] following the [illegible] of certain [illegible] study [illegible]

[illegible] identify the crystals on the microspectrograph and determine the function [illegible] temperature and [illegible]

[illegible] Aspirant Z. Zhirov."

Card 1/2

AP4012094

[illegible] Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Engineering Institute)

ACCESSION NR: AP4022718 S/0020/64/155/002/0370/0373

AUTHORS: Kitaygorodskiy, I.I.; Khodakovskaya, R. Ya.; Artamonova, M.V.

TITLE: Phase changes in the process of catalytic crystallization of glass in the SiO_2-Al_2O_3-MgO system

SOURCE: AN SSSR. Doklady*, v. 155, no. 2, 1964, 370-373

TOPIC TAGS: glass crystallization, cordierite, titanium dioxide catalyst, solid solution, high temperature quartz, quartz, spinel, sapphirine, x ray analysis, thermal analysis, cordierite

ABSTRACT: The crystallization process in glass having the cordierite composition, and in such glass containing 10 mol.% TiO_2 as the catalytic additive, was investigated. The crystallization of the following phases was observed: at about 850C--a solid solution based on high temperature quartz; 900-1000C-quartz; 900-950C-spinel; 1000-1100C--sapphirine; 1200C--cordierite. From

Card 1/5

ACCESSION NR: AP4022718

x-ray analysis it was determined that cordierite is not formed directly from glass, but through the following series of intermediate compounds: (1) separation of the first crystallization phase, solid solutions of type O silica; (2) breakdown of the solid solution with the formation of quartz, spinel and rutile; (3) conversion of the spinel to sapphirine; (4) interaction of sapphirine with quartz to form cordierite (fig. 1). Thermal analysis confirmed exothermic effects (fig. 2). The addition of TiO_2 did not cause separation of a low temperature form of cordierite--μ-cordierite, as was reported by M.D. Karkhanavala and F.A. Hummel (J. Am. Ceram. Soc., 36, 12 (1953). Using the Karkhanavala method of synthesis, μ-cordierite was formed only after heating for 150 hours. It is concluded that μ-cordierite is not a compound with constant composition, but one of the members of the solid solution based on high temperature quartz. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Akademii nauk SSSR (Academy of Sciences SSSR)

SUBMITTED: 10Nov63 DATE ACQ: 08Apr64 ENCL: 02

Card 2/5

L 13964-65 EWP(e)/EPA(s)-2/EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pq-4/Pt-10/Pu-4
EWT(m)/EWA(t) JD/WW/JG/WH

ACCESSION NR: AP4046372 S/0020/64/158/003/0582/0585

AUTHOR: Kitayrorodskiy, I. I.; Sil'vestrovich, S. I.; Firsov, V. M. B

TITLE: Strengthening of glass by hardening in molten metal

SOURCE: AN SSSR. Doklady*, v. 158, no. 3, 1964, 582-585

TOPIC TAGS: glass heat treatment, glass hardening, molten metal treatment, glass strengthening, sheet glass, Pyrex glass

ABSTRACT: A new, more efficient method of strengthening glasses having varied thermal expansion coefficients has been developed and investigated. The method consists in heat treating (hardening) glass in low-melting molten metals such as wood alloy or tin and then leaching it with hydrofluoric acid. Data from bending tests indicated that glasses with high or low coefficients of thermal expansion (common sheet glass and 3C-5K or Pyrex, respectively) can be greatly strengthened by the new method. An especially high increase in strength was achieved in thin (1.3-mm) sheet glass and in the heat-resistant glasses, as compared to the heat treatment with the most

Card 1/2

L 13964-65

ACCESSION NR: AP4046372

efficient liquid polyorganosiloxane. Data on comparative degrees of hardening for Pyrex glass indicated a much higher strengthening effect for the treatment with wood alloy than with the liquid polyorganosiloxane. This fact is explained by the intense and uniform cooling of glass in molten metal. Such cooling is achieved because of the high thermal conductivity and very high boiling point of the metals, which make possible a high-temperature (50—1000C) treatment resulting in limitation of thermoelastic strain in glass products. The possibility of achieving even higher strength in glasses having important practical applications (Pyrex, common thin glass) is mentioned. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical-Technical Institute)

SUBMITTED: 24Apr64 ENCL: 00

SUB CODE: MT NO REF SOV: 012 OTHER: 000

Card 2/2

[illegible]

[illegible] producing microporous foam [illegible]

[illegible] Byul. tsvetn. i tovar. znakov, no. 15, 1964, 110

TOPIC TAGS: foam glass, microporous foam glass, glass sintering, foam glass preparation, sponging agent

ABSTRACT: An Author Certificate has been issued for a method of producing microporous foam glass having a density of [illegible] and a pore [illegible]. A mixture of finely ground glass and a sponging [illegible] powdered or compacted [illegible]

agent (respectively) in presence of [illegible]
relatively low temperature (750-850C). The sponging agent should have
[illegible] lining slope of the curve of partial pressure versus temper-

Card 1/1

GOL'DANSKIY, V.I.; KITAYGORODSKIY, I.I., prof.; KOST, A.N., prof.; LEVICH, V.G.; ORMONT, B.F., prof.; RAZUVAYEV, G.A.; TAL'ROZE, V.L., prof.; CHERNOV, A.G.; IVANOV, S.M., red.

[Chemistry on new frontiers] Khimiia na novykh rubezhakh. Moskva, Izd-vo "Znanie," 1965. 46 p. (Novoe v zhizni. nauke, tekhnike. XI Seriia: Khimiia, no.2) (MIRA 18:4)

1. Chlen-korrespondent AN SSSR (for Gol'danskiy, Levich, Razuvayev).

ACC NR: AP5003743 [illegible]

AUTHOR: Kitaygorodskiy, I. I.; Litvinov, P. I.

TITLE: Colored glazed ceramic material. Class 32, no. 146929

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, [illegible]

TOPIC TAGS: ceramic material

ABSTRACT: This Author Certificate presents a colored glazed ceramic material based [illegible] thermally treated to complete crystallization. The glass contains SiO_2, [illegible] ZnO, TiO_2, Na_2O, [illegible] to [illegible].

Card [illegible]

Based on an idea of V. V. Serov, a new method has been developed for ob-

and the melt is not contaminated by the materials of a crucible made of steel otherwise. The furnace, which is in operation at the Tula Experimental Plant of

Card 1/3

Research Glass

OTHER

4017

ACCESSION NR: AP5014088 ENCLOSURE: 01

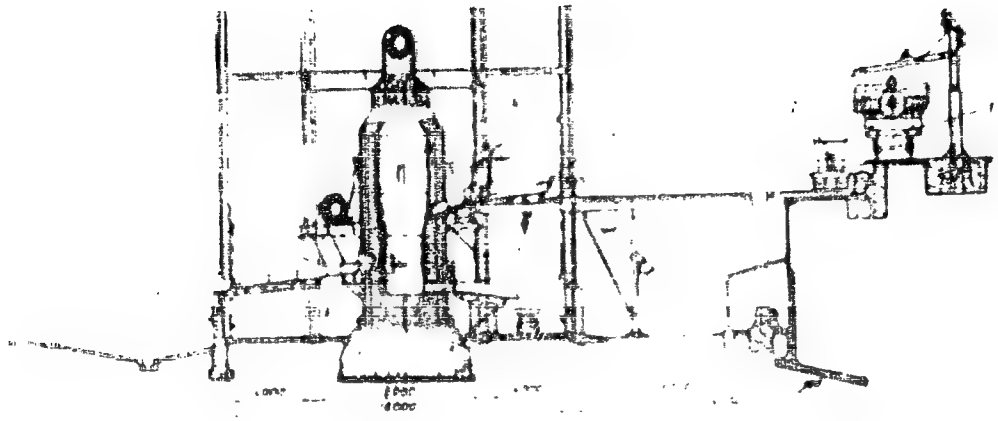

Fig. 1. Converter furnace installation

Card 3/3

[illegible] EWP(e)/EWT(m)/EWP(i)/EWP(b) [illegible]

[illegible] 21

[illegible]

[illegible] Izvestiya. Neorganicheskiye materialy, [illegible], 1965,

[illegible] glass crystallization, phosphorus pentoxide, [illegible] glass, [illegible] phase separation [illegible]

[illegible] having the following [illegible] were [illegible] heat treatment [illegible] heat treatment [illegible]

[illegible] treatment. In both cases, the [illegible] when over 5 wt. % P_2O_5 is added, the [illegible]

Card 1/2

[illegible]

[illegible] has 2 figures.

[illegible] Mendeleyeva [illegible] Engineering Institute [illegible]

12Feb65 ENCL: 00 SUB CODE: MT, [illegible]

NO REF SOV: 000 OTHER: 000

Card 2/2

[illegible] Petrov, [illegible]

[illegible] in molten slags in the [illegible]

[illegible] Organoleptic [illegible]

[illegible] foam glass, slag glass, aluminosilicate glass, [illegible] glass, pure [illegible] melting process

[illegible] effects of the changes in pressure, temperature [illegible] and of mechanical stirring of the molten slags [illegible] formation [illegible] were discussed and experimental [illegible] the mechanism [illegible] of foam glass [illegible] These analyses [illegible]

Card 1/2

[illegible] bubble formation in the [illegible] in the [illegible] by bubbling the [illegible] weight [illegible] effects [illegible]

[illegible] Mendeleyeva [illegible] Chemical Technology

Card [illegible]

[illegible]

[illegible] AP5016598

[illegible] I. I.; Khodak[illegible]

[illegible] regularities in the pyroceramization [illegible] silica -

[illegible] AN SSSR. Izvestiya. Neorganicheskiye materialy. [illegible], 1965,

TOPIC TAGS: cordierite glass, pyroceramization, glass [illegible]crystallization, magnesium [illegible]

[illegible] cordierite-base glasses containing [illegible] alkaline [illegible]

[illegible] same general behavior. Preliminary [illegible] the precrystallization period greatly affects the [illegible] phase

ACC NR: AP5016598

[illegible] and properties of the pyroceramics. The effect of this pretreatment [illegible]

[illegible] khimiko-tekhnologicheskii [illegible]

[illegible] Chemical Engineering [illegible]

SUBMITTED: [illegible] ENCL: [illegible]

SUB CODE: GOV, 007 OTHER: 009

Card 2/2

[illegible]

[illegible]

AUTHOR: Kitaygorodskiy, I. I.; Petrov, S. V.; Yegorova, [illegible]

TITLE: Effect of heat treatment on the phase composition of slag pyroceramics

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 6, 1965, 936-942

TOPIC TAGS: pyroceramic, slag, calcium silicate, glass crystallization

ABSTRACT: In order to prepare slag pyroceramics, a study of the effect of heat treatment [illegible] on the phase composition and strength characteristics of glass-crystalline [illegible] was carried out. The glasses investigated were prepared from synthetic [illegible] compositions in the system [illegible] [illegible] stage heat treatments. X-ray analysis was [illegible] phase [illegible] crystalline [illegible] heat treatment was found to determine [illegible] compositions form [illegible] their [illegible] ment. The crystallization of [illegible] calcium silicates (pseudowollastonite [illegible] wollastonite [illegible]) as the crystalline phases. Such phases in the glass crystalline materials based on slags are pseudowollastonite and anortite $CaO \cdot Al_2O_3 \cdot 2SiO_2$. A relative increase in the

Card 1/2

L 60952-65

ACCESSION NR: AP5018929

2

degree of crystallization of the material is usually associated with an increase in strength; the minimum strength corresponded to conditions of treatment where the habit and physical properties of the crystalline phase formed differed from those of the phases already present. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Chemical Engineering Institute)

SUBMITTED: 11Feb65 ENCL: 00 SUB CODE: MT, GC

NO REF SOV: 002 OTHER: 000

Card 2/2

KITAYGORODSKIY, I.I., doktor tekhn. nauk; MIRNOV, S.V., kand. tekhn. nauk

Container glass on a blast furnace slag basis. Stek. i ker. 22 no.4:3-5 Ap '65. (MIRA 18:5)

1. Moskovskiy ordena Lenina khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.

[illegible]

[illegible]

[illegible]

Effect of the composition of neodymium-activated glass [illegible] the absorption spectra and the luminescence lifetime

SOURCE: AN SSSR. Doklady, v. 161, no. 1, 1965, 118-121

TOPIC TAGS: silicate glass, germanate glass, neodymium activated glass, laser system, light absorption spectrum, luminescence lifetime, glass composition

ABSTRACT: In connection with the problem of devising more powerful laser systems, the light absorption and luminescence of neodymium-activated alkali silicate and germanate glasses have been studied. The interest in activation by the Nd^{3+} ion was [illegible] by the reported relative facility of population inversion with Nd, without [illegible] at low temperature. The purpose of the study was to determine the effect [illegible] of glass-forming oxides [illegible] Na [illegible] or K [illegible] and [illegible] concentration in the Na [illegible] glass sys- [illegible] absorption spectra were plotted, maximum [illegible] temperature [illegible] bands and luminescence lifetimes were measured at room temperature [illegible] ratios in the 1:1 to 1:11 range and for [illegible] 1 Nd [illegible] in the glass systems studied. The glasses were prepared by melting chemically pure materials at [illegible] to

Card 1/3

L 37688-65

ACCESSION NR: AP5009224

1500C. Luminescence was excited with an IFK-2000 lamp. In the silicate systems, at a constant Nd_2O_3 content (2% by weight), the width of absorption bands and E maxima increased with an increase in alkali content. Simultaneously, τ increased to a maximum, then started to decrease. The maximum τ was 800 μsec for the SiO_2/K_2O = 1.7, much lower for the same ratio in the $Na_2O—SiO_2$ system, and 580 μsec for the GeO_2/K_2O = 1.3. In the $K_2O—GeO_2$ system, the fine structure of absorption spectrum and E maximum for 573 mμ were observed at the same τ ratio. The width of the absorption bands in $K_2O—GeO_2$ system varied in the direction opposite to that in the $K_2O—SiO_2$ system, i.e., decreased when the K_2O content was increased. The finest absorption structure was observed in the $K_2O—SiO_2$ system. As expected, τ decreased with an increase in the Nd_2O_3 concentration in the $1K_2O \cdot 7SiO_2$ and $1K_2O \cdot 9GeO_2$ glasses, because of concentration quenching of luminescence. The above data were discussed on the basis of coordination between ions in glass structures and the interaction of Nd^{3+} with surrounding oxygen ions. In rubidium glasses, τ was found to be significantly higher than in potassium glasses. Orig. art. has 2 figures and 1 table.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology)

Card 2/3

L 22127-65 EWT(m)/EWP(t)/EWP(b)/EWP(e) Pg-4 JAD/WW
ACCESSION NR: AP5017210 UR/0020/65/162/006/1339/1341

AUTHOR: Kitaygorodskiy, I. I.; Shirkevich, T. L.

TITLE: Effect of the nature of crystallization of glass on the structure of foam glass

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1339-1341, and insert facing p. 1340

TOPIC TAGS: foam glass, glass crystallization, glass structure

ABSTRACT: The authors studied the preparation of foam glass from alkali-free and low-alkali boron-free glasses differing both in composition and in crystallizing properties. An investigation of the foamability of the glasses showed that a high degree of crystallization sometimes has a negative effect on the foaming and structure of foam glass (glasses Nos. 13v, 2, 3, 4, and 5), and even prevents its formation (glass No. 87). In other cases, foam glass with regular, fine closed pores is obtained (No. 61) from glass which crystallizes to a high degree in the bulk as well as from glasses of low crystallizability such as M-519 and M-519a. To elucidate the causes of this diverse behavior, x-ray diffraction and

Card 1/2

L 63627-65

ACCESSION NR: AP5017210

electron microscopic analyses were carried out on glasses crystallized under various conditions and on samples of foam glass. It was found that the nature of the crystallization has a pronounced effect on the structure of the foam glass obtained. The formation of a uniform, finely crystalline microstructure does not prevent the formation of a foam glass having regular, fine closed pores. Relatively coarse, nonuniform crystals impair the foamability and sometimes prevent the formation of foam glass. "The electron micrographs were taken by K. M. Vaysfel'd." Orig. art. has: 4 figures.

ASSOCIATION: None

ENCL: 00

SUB CODE: MT

SUBMITTED: 26Nov64

OTHER: 001

NO REF SOV: 002

Card 2/2

KITAYGORODSKIY, I.I.; PETROV, S.V.

Iron formation in slag melts in the state of bubbling. Izv. AN SSSR. Neorg. mat. 1 no.5:788-791 My '65. (MIRA 18:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

KITAYGORODSKIY, I.I.; ZHITKEVICH, Z.V.

Microdemixing in the crystallization of high-calcium rhenium-containing glasses. Izv. AN SSSR. Neorg. mat. 1 no.5:[illegible] My '65. (MIRA 18:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

KITAYGORODSKIY, I.I.; KHMARONSKAYA, R.Ya.

Some regularities of glass crystallization process in the system SiO_2 - Al_2O_3 - MgO. Izv. AN SSSR. Neorg. mat. 1 no.5:796-803 My '65. (MIRA 18:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

[illegible] underlying the microcrystallization of glasses [illegible] in the liquation region of the system $CaO - MgO - SiO_2 + (R_2O;R_2O_3)$. Vestn. AN BSSR. Ser. [illegible]. no.2:41-45 [illegible]. (MIRA [illegible])

KITAYGORODSKIY, I.I. [Kitaihorodski, I.I.] (deceased); KUZ'MENKOV, M.I. [Kuz'mienkou, M.I.]; GOVORUSHKO, Z.I. [Havarushka, Z.I.]; CHUNINA, L.A.; YAGLOV, V.N. [IAhlou, V.M.]

Mechanism underlying the microcrystallization of glasses located in the isomorphic region of the system

$$CaO - MgO - SiO_2 + (R_2O; R_2O_3).$$

Vestsi AN BSSR.Ser.khim.nav. no.2:46-51 '65.

(MIRA 18:12)

L 24355-66 EWP(e)/EWT(m)/T/EWP(t) IJP(c) JD/WW/WH

ACC NR: AP6007261 (A) SOURCE CODE: UR/0363/66/002/002/0376/0379

AUTHOR: Kitaygorodskiy, I.I. (Deceased); Pavlushkin, N.M.; Petrov, S.V.

ORG: Moscow Chemico-technological Institute im. D.I.Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Effect of phase composition and structure of slag-microcrystalline glasses (Pyroceramas) on some of their physico-chemical properties

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 2, 1966, 376-379

TOPIC TAGS: glass property, phase composition, crystal structure

ABSTRACT: In most cases, slag Pyroceramas are polycrystalline materials in which the role of the cementing layer is played by the glass phase. However, with an increase in the amount of the glass phase, the strength of the material decreases. In addition, the bending strength is a function of the heat treatment conditions (for example, for one of these materials the average measured strength varied from 1000 to 1900 kg/cm^2). Study of only one parameter of these materials, for example the character of the change in density, cannot fully explain the structural changes taking place during crystallization of the glass. The article presents a table listing the properties of several of the slag Pyroceramas. A

Card 1/2 UDC: 666.1:542.65

L 24355-66

ACC NR: AP6007261

second table gives the resistance of several types to sulfuric acid solutions. Orig. art. has: 4 figures and 2 tables.

SUB CODE: 07,11/ SUBM DATE: 27Sep65/ ORIG REF: 001/ OTH REF: 001

Card 2/2

L 40338-66 EWT(m)/EWP(e) WH/WW

ACC NR: AP6007522 (A) SOURCE CODE: UR/0419/65/000/002/0041/0045

46
45
B

AUTHOR: Kitayharodski, I. I. (Deceased); Zhunina, L. A.; Kuz'myankow, M. I.

ORG: None

TITLE: Mechanism of pyroceramic conversion of glass in the liquation region of the $CaO-MgO-SiO_2+(R_2O; R_2O_3)$ system

SOURCE: AN BSSR. Vestsi. Seryya khimichnykh navuk, no. 2, 1965, 41-45

TOPIC TAGS: silicate glass, ceramic material, pyroceramic, fluoride, liquation, thermal analysis

ABSTRACT: The authors study the process of pyroceramic conversion of glass in the ternary $CaO-MgO-SiO_2$ system with various concentrations of fluoride added in the form of NaF in various amounts above 100 wt.% during founding for 4 hours at a maximum temperature of 1480°C. Electron photomicrographs of this glass show a large number of nonhomogeneities with dimensions of 0.1 μ indicating active liquation of the glass. As the glass is heated to 600-700°C, these nonhomogeneities gradually increase in size reaching dimensions of 1 μ and greater. X-ray phase analysis shows no crystalline phase. These data are confirmed by differential thermal analysis. The process by which fluorine is integrated into the silicate lattice during melting of the charge is discussed as well as the separation of fluorine during cooling. Liquation in this case should apparently be considered an independent phase process instead of merely a

Card 1/2

L 40338-66

ACC NR: AP6007522

phenomonon which precedes crystallization. Initiation of crystallization in this glass is determined chiefly by an increase in the area of the phase interface. Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 008

Card 2/2

L 40339-66 EWT(m)/EWP(e) WH/WW

ACC NR: AP6007523 (A) SOURCE CODE: UR/0419/65/000/002/0046/0051

AUTHOR: Kitayharodski, I. I. (Deceased); Kuz'myankow, M. I.; Havarushka, Z. I.; Zhunina, L. A.; Yahlow, V. M. 49 48 B

ORG: None

TITLE: Mechanism responsible for conversion of glass to pyroceramic 15 in members of the isomorphic series of the $CaO-MgO-SiO_2+(R_2O; R_2O_3)$ system

SOURCE: AN BSSR. Vestsi. Seryya khimichnykh navuk , no. 2, 1965, 46-51

TOPIC TAGS: silicate glass, solid solution, calcium compound, mangesium compound, ceramic material, pyroceramic

ABSTRACT: A method is proposed for using plentiful minerals as raw materials for production of ecomonic pyroceramics with a pyroxene composition and excellent physical, mechanical, thermal and anticorrosion properties. The phase diagram of the $CaO-MgO-SiO_2$ system is used as a base with addition (above 100 wt.%) of R_2O and R_2O_3 in the form of Na_2O, Al_2O_3 and Fe_2O_3. This ternary system has a pyroxene field containing a continuous series of diopside-enstatite solid solutions. There is a good basis for assuming that a continuous isomorphic series passes through the entire system. This is important from the standpoint of synthesizing pyroceramics based on multicomponent raw materials (e. g. clay) since all components appearing in the original raw material

Card 1/2

L 40339-66

ACC NR: AP6007523

enter the crystalline structure of the pyroxene solid solution during conversion of the glass to pyroceramic in the isomorphic series. The glass was founded in 1-liter quartz crucibles in a gas furnace at a maximum temperature of 1450-1470°C. The optimum compositions were founded in 25-kg crucibles. The experimental specimens were subjected to gradient crystallization and heat treatment under various conditions (2, 4 and 6 hours at 600-1000°C). The pyroceramic products are subjected to comprehensive x-ray, electron microscope, petrographic and extraction analysis. The results show that pyroceramic conversion of pyroxene glasses synthesized from nonmetallic raw materials is a continuously variable process. Continuous interaction between the structural complexes in the glass during heat treatment results in a pyroxene phase of variable composition. Thermograms of the glass are given. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 013/ OTH REF: 001

Card 2/2

L 32075-66 EWT(1)/EWP(e)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/WW/LHB/WH

ACC NR: AP6013351 (A) SOURCE CODE: UR/0363/66/002/004/0726/0737

AUTHOR: Kitaygorodskiy, I. I. (Deceased); Pavlushkin, N. M.; Khodakovskaya, R. Ya. 47 B

ORG: Moscow Chemical Engineering Institute im. D. I. Mendeleyev (Moskovskiy khimikotekhnologicheskiy institut)

TITLE: Possibility of applying the method of quantitative x-ray phase analysis to vitreous-crystalline materials

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 4, 1966, 726-737

TOPIC TAGS: phase analysis, x-ray diffraction analysis, quartz, glass

ABSTRACT: The object of the study was to work out a technique for quantitatively determining the composition of crystalline phases in pyroceramic materials. Because of its simplicity, rapidity, and popularity, the method of quantitative x-ray phase analysis was chosen. Two variants of this method were used: (1) direct measurement of the intensity of diffraction reflection (plotting of calibration graph in the coordinates I vs. % of crystalline phase), (2) internal standard (plotting of calibration graph in the coordinates I/I_{st} vs. % of crystalline phase). A quantitative x-ray phase analysis was carried out on pyroceramic material of the SiO_2-Al_2O_3-MgO system containing three crystalline phases: quartz, spinel, and rutile, and both variants were shown to yield satisfactory results. Because of the characteristics of the pyroceramic structure, more accurate data on the content of crystalline phases are provided by measurements of the integral intensity (area under the peak). The results of the x-ray phase analysis

Card 1/2 UDC 661.1:542.65

CA

3

Voltaic photoelectric effect in silver halides. Preliminary communication. E. Kirillov, M. [illegible], and A. Mokhanov. *Acta Physicochim.* (U. R. S. S.) 7, [illegible] (1938)(in English); *J. Phys. Chem.* (U. R. S. R.) 7, No. 2 (1936)(in Russian).—Irradiation of pure monovalent AgCl wetted, in the electrodes produces an e. m. f. with max. values of [illegible] v. at [illegible] A. and [illegible] at [illegible] A. Illumination of the systems AgI-Ag and Ag-Au gave contact potentials with maxima at [illegible] and 10,[illegible] and minima at [illegible] and [illegible] for the 1st and with a max. at 7000 A. and minima at the same points for the 2nd. The effects are interpreted as photochem. rather than barrier-film effects. F. H. Mathewson

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Kitaygorodskiy, M. M.

USSR/Physics - Piezoelectrics FD-1032

Card 1/1 : Pub. 153 - 3/23

Authors : Kogan, A. I., and Kitaygorodskiy, M. M.

Title : Piezoelectric materials made of pressed barium titanate

Periodical : Zhur. tekh. fiz., 24, 1371-1374, Aug 1954

Abstract : Obtained barium meta-titanate and solid solutions of barium and lead meta-titanate by firing at temperatures up to 1250°C and by successive pressing with organic binders. Found that these samples possess piezoelectric properties after polarization, but that pressed solid solutions of barium and lead meta-titanate possess greater piezoelectric moduli than the barium meta-titanate samples, which is explained by the lower caking temperatures of the solid solution. Thank B. M. Vul, Corr-Mem. Acad. USSR. Six references, 4 USSR (e.g. B. M. Vul and I. M. Gol'dman, DAN SSSR, 46, No. 4, 1945; G. I. Skanavi, 1949; A. V. Rzhanov, 1949; Yu. V. Karyakin, 1947).

Institution : --

Submitted : 15 March 1954

KOGAN, A.I.; KITAYGORODSKIY, M.M.

Terephthalic acid polyesters of glycols as elastomers. Zhur. prikl. khim. 29 no.4:628-632 Ap '56. (MIRA 9:11)

1. Odesskiy elektrotekhnicheskiy institut svyazi.
(Terephthalic acid) (Rayon)

KITAYGORODSKIY, N.M.

KOGAN, A.I.; KITAYGORODSKIY, N.M.

Diphenylglycerin polyesters. Zhur. prikl. khim. 30 no.11:1677-1681 N '57. (MIRA 11:2)

1. Odesskiy elektrotekhnicheskiy institut svyazi.
(Glycerol)

KITAYGOROODSKIY, M.M.

Stability of the piezoelectric effect in compressed barium titanate. Fiz. tver. tela 1 no.4:628-629 '59.
(MIRA 12:6)

1.Odesskiy elektrotekhnicheskiy institut svyazi.
(Barium titanate) (Piezoelectric substances)

MARSHALKOVICH, D.B., polkovnik meditsinskoy slushby; SACHENKO, N.L., podpolkovnik meditsinskoy slushby; AZBUKIN, G.V., podpolkovnik meditsinskoy slushby; EKLOUSOV, G.G., podpolkovnik meditsinskoy slushby; KITAYGORODSKIY, M.I., podpolkovnik meditsinskoy slushby; FILIPPOVICH, B.A., podpolkovnik meditsinskoy slushby

Rendering of emergency aid at the regimental medical aid station to persons poisoned with toxic organophosphorus substances. Voen.-med. zhur. no.3:19-22 '65. (MIRA 18:11)

IVKIN, N.M.; KITAYGORODSKIY, N.S.; KUPEL'NIKOV, D.D.; NEROLEV, Yu.M.

Analogue of allevardite from Daghestan. Zap. Vses. min. ob-va 88 no.5:554-563 '59. (MIRA 13:2)

(Daghestan--Mica)

ABDULIN, A.; ALEKSEYEV, I.; BANTLE, O.; BOBROV, L.; BOZHANOV, B.; BOYKO, V.; BONDAREV, K.; BORZOV, V.; VERKHOVSKIY, N.; GUBAREV, V.; GUSHCHEV, S.; DEBABOV, V.; DIKS, R.; DMITRIYEV, A.; ZHIGAREV, A.; ZEL'DOVICH, Ya.; ZUBKOV, B.; IRININ, A.; IORDANSKIY, A.; KITAYGORODSKIY, P.; KLYUYEV, Ye.; KLYACHKO, V.; KOVALEVSKIY, V.; KNORRE, Ye.; KONSTANTINOVSKIY, M.; LADIN, V.; LITVIN-SEDOY, M.; MALEVANCHIK, B.; MANICHEV, G.; MEDVEDEV, Yu.; MEL'NIKOV, I.; MUSLIN, Ye.; NATARIUS Ya.; NEYFAKH, A.; NIKOLAYEV, G.; NOVOMEYSKIY, A.; OL'SHANSKIY, N.; OS'MIN, S.; PODOL'NYY, R.; RAKHMANOV, N.; REPIN. L.; RESHETOV, Yu.; RYBCHINSKIY, Yu.; SVOREN', R.; SIFOROV, V.; SOKOL'SKIY, A.; SPITSYN, V.; TEREKHOV, V.; TEPLOV, L.; KHAR'KOVSKIY, A.; CHERNYAYEV, I.; SHAROL', L.; SHIBANOV, A.; SHIBNEV, V.; SHUYKIN, N.; SHCHUKIN, O.; EL'SHANSKIY, I.; YUR'YEV, A.; IVANOV, N.; LIVANOV, A.; FEDCHENKO, V.; DANIN, D., red.

[Eureka] Evrika. Moskva, Molodaia gvardiia, 1964. 278 p. (MIRA 18:3)

Kitaygorodskiy, S.A.

KITAYGORODSKIY, S.A.; STREKALOV, S.S.

Method of calculating the depth of the layer of transitional temperature in the sea by hydrological observation data. Vest. Mosk.un.Ser.biol.,pochv.,geol.,geog. 11 no.2:213-220 '56. (MIRA 10:10)

1. Kafedra okeanologii.

(Ocean temperature)

Kitaygorodskiy, S. A.

AUTHOR: Kitaygorodskiy, S. A. 49-9-3/13

TITLE: On the coefficient of vertical turbulent exchange in the sea. (O koeffitsiente vertikal'nogo turbulentnogo obmena v more).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.9, pp.1118-1132 (USSR)

ABSTRACT: The fundamental results are considered of applying the "semi-empirical theory of turbulence" to the analysis of the dynamic processes in the sea. A simplified method is used for calculating the coefficient of turbulent viscosity caused by the simultaneous action of wind driven waves and currents. A comparative evaluation is given of the role of wind driven waves and currents in the development of the turbulence in the upper layer of a deep sea. The obtained calculated data on the coefficient of turbulent viscosity are compared with other indirect methods of determining the magnitudes of this coefficient in the sea. The results are summarised in the graphs, Figs.3-5, and for comparison the magnitudes of the coefficients of turbulent viscosity and of the amplitude of its changes obtained by Sverdrup and other authors are given in Table 2, p.1127. The results given in the first part of the paper will enable quantitative

Card 1/2

KITAYGORODSKIY, S. A.

"Some Problems on the Theory of Turbulent Mixing in the Upper Sea Layer," report to be submitted for the Intl. Oceanographic Cong. New York City, 31 Aug - 11 Sep 1959.

(Inst. of Oceanology, Moscow)

KITAYGORODSKIY, S.A.

KITAYGORODSKIY, S. A., Cand Phys-Math Sci — (diss) "Concerning the theory of the turbulent agitation of the sea in connection with the calculation of the thickness of the upper isothermal layer," Moscow, 1960, 14 pp, (Institute of the Physics of the Atmosphere Academy of Sciences USSR)
(KL, 38-60, 100)

KITAYGORODSKIY, S.A.

Possibility of theoretical calculation of the vertical temperature profile in the surface layer of the sea. Izv. AN SSSR. Ser. geofiz. no. 3:487-494 Mr '61. (MIRA 14:2)

1. Institut okeanologii AN SSSR.
(Ocean temperature)

KITAIGORODSKIY, S.A.

Theory of turbulent mixing in the sea with reference to depth calculations for the upper isothermal layer. Trudy inst. okean 52:3-86 '61. (MIRA 14:6)

(Oceanography) (Turbulence)

KITAYGORODSKIY, S.A.

Small-scale turbulence in the surface layer of the sea rough with fully developed wind waves. Trudy Inst. okean. 52:87-96 '61. (MIRA 14:6)

(Turbulence) (Oceanography)

KITAYGORODSKIY, S.A.

Some applications of methods of the theory of similitude in analysing wind waves as a probability process. Izv. AN SSSR, Ser. geofiz. no.1:105-117 Ja '62. (MIRA 15:2)

1. AN SSSR, Institut okeanologii.
(Waves)

KITAYGORODSKIY, S.A.; STREKALOV, S.S.

Analysis of the spectra of wind waves. Part 1. Izv. AN SSSR. Ser. geofiz. no.9:1221-1228 S '62. (MIRA 15:8)

1. Institut okeanologii AN SSSR.
(Waves)

KITAYGORODSKIY, S.A., AND STREKALOV, S.S., AND KARAPETYAN, K.I.

Universal relations between parameters of the turbulent air flow above the sea and the energy spectrum of windwaves.

Report to be submitted for the 13th General Assembly, INTL. Union of Geodesy and Geophysics (IUGG), Berkeley, Calif., 19-31 Aug 63

KITAYGORODSKIY, S. A., and FILYUSHKIN, B. N.,

"Application of the turbulent mixing theories in the upper layer of the ocean to the analysis of observations"

Report to be submitted for the 13th General Assembly, Intl. Union of Geodesy and Geophysics (IUGG), Berkeley, Calif., 19-31 Aug 63

KITAIGORODSKIY, S.A.; STREKALOV, S.S.

Analysis of the spectra of wind waves. Part 2. Izv. AN SSSR. Ser. geofiz. no.8:1240-1250 Ag '63. (MIRA 16:9)

1. Institut okeanologii AN SSSR, i Morskoy gidrofizicheskiy institut. Predstavleno chlenom redaktsionnoy kollegii Izvestiy AN SSSR, Seriya geofizicheskaya, S.V.Dobroklonskim.

(Waves)

DRUET, Czesław, dr inż., adiunkt; KITAJGORODZKIJ, Siergiej, kand. nauk fiz.-mat.

Methods of prognosticating wind sea waves for needs of hydraulic engineering. Archiw hydrotech 10 no.1:29-57 '63.

1. Instytut Budownictwa Wodnego, Polska Akademia Nauk, Gdansk (for Druet). 2. St. pracownik naukowy, Instytut Oceanologii, Akademia Nauk ZSSR, Moskwa (for Kitajgorodskij).

KITAYGORODSKIY

DRUET, Czesław; KITAGORODSKIĬ, Siergiej

Statistical laws of distribution of the elements of sea wind waves. Rozpr hydrotechn no.13:57-71 '63.

KITAYGORODSKIY, S.A.; FILYUSHKIN, B.N.

Discontinuity layer in the ocean. Trudy Inst. okean. 66:3-28 '63. (MIRA 16:10)

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AUTHOR: Kitaygorodskiy, S. A.; Volkov, Yu. A.

TITLE: The sea surface roughness parameter and the calculation of the turbulent momentum flux in the atmospheric layer adjacent to water

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 9, 1965, 973-988

TOPIC TAGS: atmospheric turbulence, sea water, surface water, lower atmosphere

ABSTRACT: The profiles of the average velocity in turbulent flows above a uniform stationary wall (in absence of significant temperature stratification) are described by a logarithmic formula. When this logarithmic boundary layer model is applied to the analysis of turbulent exchange processes above sea surfaces the problem arises concerning the determination and physical interpretation of the roughness parameter of a wavy water surface. The present article analyzes the drag of sea surfaces. The processing of a large amount of experimental data shows that 1) the roughness parameter z_0 depends not only on the absolute values of the spectral density of wind-induced waves but also on their frequency composition; 2) z_0 depends in the general case on the dynamical velocity v_* (friction speed), the wave height, phase velocity, and, possibly, on the mean square deviation of the free surface; 3) in spite of earlier attempts by various authors, the $z_0(v_*)$ relationship cannot be written down in a unique way, and a more promising approach seems to be the one considering z_0 a random function of

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v_*; and 4) any average dependence of z_0 on v_* should be introduced only after establishing the intervals of z_0 values for certain given probabilities; curves established by the authors show that the existing experimental material permits the correlation of any v_* value with z_0 (varying by no more than one order of magnitude) with only 50% of probability. "The authors thank A. M. Yaglo and A. S. Monin for their interest and valuable advice." Orig. art. has: 26 formulas and 6 figures.

44,55

ASSOCIATION: Institut okeanologii, Akademiya nauk SSSR (Institute of Oceanology, Academy of Sciences, SSSR); Institut fiziki, Akademiya nauk SSSR atmosfery (Institute of Atmospheric Physics, Academy of Sciences, SSSR)

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KITAYGORODSKIY, S.A.; VOLKOV, Yu.A.

The roughness parameter of the sea surface and the calculation of turbulent flows of momentum in the atmospheric ground layer. Izv. AN SSSR. Fiz. atm. i okeana 1 no.9:973-988 S '65. (MIRA 18:9)

1. Institut okeanologii AN SSSR i Institut fiziki atmosfery AN SSSR.

KITAYGORODSKIY, S.A.; VOLKOV, Yu.A.

Calculation of turbulent flows of heat and moisture in the surface boundary layer above the water. Izv. AN SSSR. Fiz. atm. i okeana 1 no.12:1319-1336 D '65. (MIRA 19:1)

1. Institut okeanologii AN SSSR i Institut fiziki atmosfery AN SSSR. Submitted April 15, 1965.

KITAYGORODSKIY, YU. I.

USSR/Electricity
Heating - Electric Units
Heating, Electric

Nov 48

"Review of 'Standardization of High-Frequency Equipment,' by D. B. Mandrus, S. M. Margolis, and V. M. Zil'berman, Engineers," G. I. Babat, Dr Tech Sci, Moscow, A. V. Netushil, Cand Tech Sci, Moscow, Yu. I. Kitaygorodskiy, Engr, Sci Res Inst, Min of Munitions, à p

"Elektrichestvo" No 11

Critical review of subject article on the proper selection, and production, of the parts necessary for high-frequency heating.

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